Metropolitan Transportation Commission (MTC)
Technology Transfer Seminar
March 14, 2003

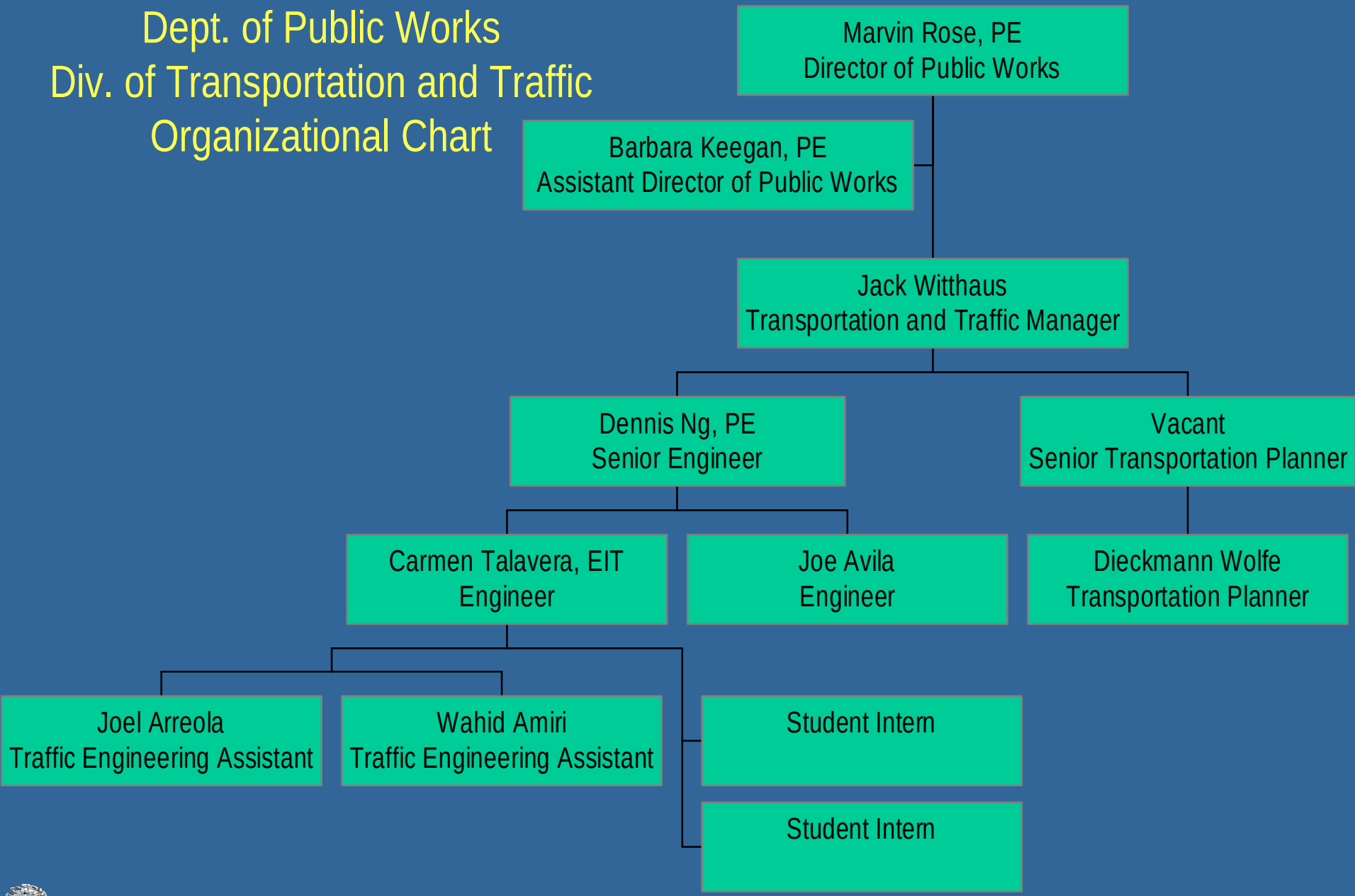
Case Study:
Canary Drive
Stage I and II Traffic Calming

City of Sunnyvale
Department of Public Works
Division of Transportation and Traffic

City of Sunnyvale

- Located in Santa Clara County of San Francisco Bay Area
- Area of Sunnyvale is approx. 24 sq. miles
- Population ~130,000 residents
- Non-resident Population ~100,400 commuters

City of Sunnyvale
Dept. of Public Works
Div. of Transportation and Traffic
Organizational Chart



Sunnyvale Traffic Calming Policy

- Policy was adopted by the City Council in February of 1997.
- Policy document defined:
  - Thresholds for the implementation of traffic calming
  - Stage I and then Stage II Traffic Calming measures
  - Process and expectations of Traffic Calming Program

Sunnyvale Traffic Calming Thresholds

- To qualify for Traffic Calming, the street:
  - must be classified as a neighborhood residential street in the City's Roadway Classification Map
  - the ADT volume must be greater than 1000 vehicles per day
  - the 85th percentile speed must be greater than 32 miles per hour

Sunnyvale Traffic Calming Process

(6 Steps)

Step 1 - Report the Problem

- Upon reporting the problem, Staff will record problem location and provide the resident will the necessary forms and neighborhood petitions to be completed

- During the initial contact, Staff will inform residents whether or not the street meets the Neighborhood Residential street criteria

Sunnyvale Traffic Calming Process (continued)

Step 2 - Neighborhood Consensus

- The neighborhood will need to submit a petition from the majority of the affected residents documenting the problem.

Step 3 - Data Collection

- Staff will collect traffic volumes, speed data and observe traffic patterns to see if verify if the minimum requirements are met.

Sunnyvale Traffic Calming Process (continued)

Step 4 - Stage I Traffic Calming

- If the location exceeds the minimum thresholds, Staff will work with the neighborhood on implementing measures that do not involve permanent impediments on the roadway system.

Step 5 - Follow-up Data Collection

- Upon implementation of one or more Stage I measures, Staff will conduct studies 3 to 6 months after installation to measure effectiveness. If successful, the location will no longer meet the minimum thresholds and study will end.

Sunnyvale Traffic Calming Process (continued)

If the threshold are still exceeded after stage I…..

Step 6 - Stage II Traffic Calming

- Staff works with the neighborhood to develop a plan to implement Stage II measures intended to control traffic speed or volumes. Plan will have to be approved by the neighborhood and City Council

Sunnyvale Traffic Calming Policy

Expectations and involvement

- Neighborhood involvement throughout the process is high. Nothing will be considered for implementation without neighborhood comment and approval. If attendance at meetings and survey responses become low, it will be deemed that the neighborhood does not feel a problem exists.

Stage I Measures

Stage I Measures could include:

- Education/Neighborhood Outreach
- Police enforcement
- Increased Signing and Striping
- Deployment of radar speed trailers
- Warranted Traffic Control Measures (Stop/Yield Signs)


SPEED
LIMIT
25


TRAFFIC
School
is Boring
Slow Down


SPEED
LIMIT
25

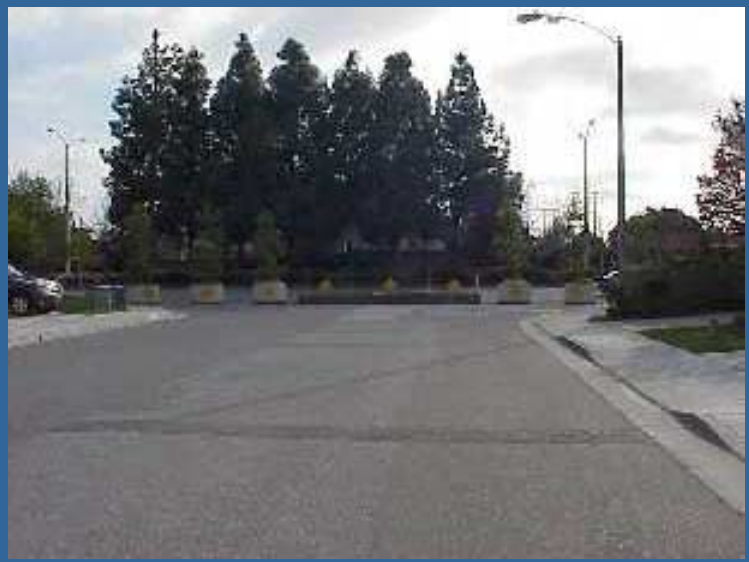
Stage II Measures

Stage II Measures include:

- Speed Humps/Tables
- Traffic Circles/Roundabouts
- Median Entry/Exit Islands
- Curb Extensions/Bulb-outs
- Barriers/Forced-Turn Islands/Diverters
- Turn Prohibition Signs
- Street Closures


BUMP
15


STOP



Stage II Implementation Criteria

- Installation must not result in traffic diversion to other neighborhood streets.
- 60% of impacted residents, 100% of residents w/in 100ft of device must support installation.
- Devices located min. 25ft from driveways, manholes, drain inlets, water valves, street monuments etc.
- Min. 24ft from fire hydrant
- Min safe stopping distance must be provided
- Police and Fire must approve plan
- City Council approval

Canary Drive Case Study

Background

- Located in southern portion of Sunnyvale
- Connects Homestead Road(Arterial roadway) with Inverness Avenue (Residential Collector)
- Classified as a neighborhood residential street with single family homes
- Length of Canary Drive is ~1200 feet
- Posted speed limit is 25 mph
- Junior High School and Park located at Canary and Inverness

Preliminary Study: Steps 1,2, &3

1. Neighborhood residents contacted Staff in October 1999
2. Neighborhood's main concern was speed of traffic and unsafe driving (passing, tailgating)
3. Initial data gathered showed that the average daily volume was 1200 vehicles per day and the 85th percentile speed was 35mph

Stage I Traffic Calming: Step 4

- First neighborhood meeting held July 2000
- Resident/Property Owners and Staff agreed upon various Stage I measures
  - Installation of additional 25mph Speed Limit signs and legends
  - Increased enforcement action by Sunnyvale Dept. of Public Safety
  - Scheduled deployment of the City's radar speed trailer
  - Upon approval by the neighborhood, installation of a double yellow centerline stripe on Canary

Stage I Traffic Calming: Step 5

- Out of 80 residents surveyed, 40 responded with 35 in support of the proposed Stage I measures and 5 not supportive.
- 4 months after implementing the Stage I measures Canary Drive was re-evaluated
  - Traffic volumes decreased from 1200 vehicles per day to 1100 vehicles per day
  - 85th percentile speeds decreased from 35mph to 34mph
- Data showed that Canary met minimum requirements for Stage II Traffic Calming.

Stage II Traffic Calming: Step 6

- Two neighborhood meetings/workshops were held in November 2000 and January 2001 to develop a Stage II Traffic Calming Plan.
- John Ciccarelli from Transight LLC was hired to evaluate the feasibility of a traffic circle.
- Plan developed included an entry/exit median island, speed hump, and traffic circle.
- Sunnyvale Dept. of Public Safety (Police/Fire) approved the plan after reviewing for impacts and problems.

Stage II Traffic Calming: Step 6 (cont.)

- Due to resident concerns and questions regarding impacts and effectiveness of the speed hump component, Staff decided to purchase and install a temporary rubber speed hump at the proposed location for a one-month neighborhood evaluation.
- Preliminary speed monitoring showed a reduction of speed to 28mph in the vicinity of the temporary speed hump.
- At a follow-up neighborhood meeting, the response was favorable for the speed hump.

Stage II Traffic Calming Neighborhood Consensus

- Neighborhood was asked to approve the Stage II plan, with 50% response rate, 75% approved and 25% disapproved of the plan.
- The Stage II plan was presented and approved by City Council on June 2002.
- Authorization of funds for a capital project.

Construction

- In order to reduce costs and time, the City's Public Works crews would construct the permanent Stage II measures.
- Total construction time was approximately 1 month
  - 1 day to install new water tap for irrigation
  - 2 weeks to construct traffic circle and deflector islands
  - 1 week to construct entry/exit median island and speed hump
  - 1 week for signing/striping and landscaping
- Approximately $57,000 for construction.


SPEED
HUMP
10
MPH

Post Implementation

- 1 month after, speed monitoring data shows that 85th percentile speed has been reduced to 26.5mph.
- City will follow-up with additional studies at 6 months to gauge long-term effectiveness and report back to neighborhood and City Council.
- Neighborhood response from residents on Canary has been positive.
- A few negative responses from residents of surrounding area.

Level of Effort

- Total project time - approximately 2 years
- 1 Engineer and 2 Engineering Assistants
- 5 Neighborhood Meetings
- 3 Neighborhood surveys
- 2 Reports to City Council

Lessons Learned

- Police Enforcement is not cure all for speeding issues.
- Traffic Engineering and Police need to work closely together to be effective.
- Police and Fire should be informed and approve of any Stage II plans.
- Keep neighborhood apprised of project status.
- Educate residents on advantages and disadvantages of each traffic calming measure.
- Encourage neighborhood participation in all stages of study. Neighborhood buy-in is key.

Questions??